

Sustainable Investment Research Initiative: Review of Evidence

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June 17, 2013

INVO Mission

- **We aim to be a principled and effective investor:**
To deliver sustainable, risk-adjusted returns
- **Grounded in Economics:** Long-term value creation requires effective management of three forms of capital - financial capital, physical capital, human capital

Sustainable Investment

“Sustainable investment in its simplest form is the ability to continue, and for a long-term investor like CalPERS with long-term liabilities, it is critically important. Long-term value creation requires the effective management of three forms of capital: financial, human and physical – this is why we are concerned with environmental, social, and governance issues.”

Physical Capital - Environment

Includes managing risk posed by climate change, and the use of natural resources and buildings

Human Capital – Social

Includes health, safety, and labor practices

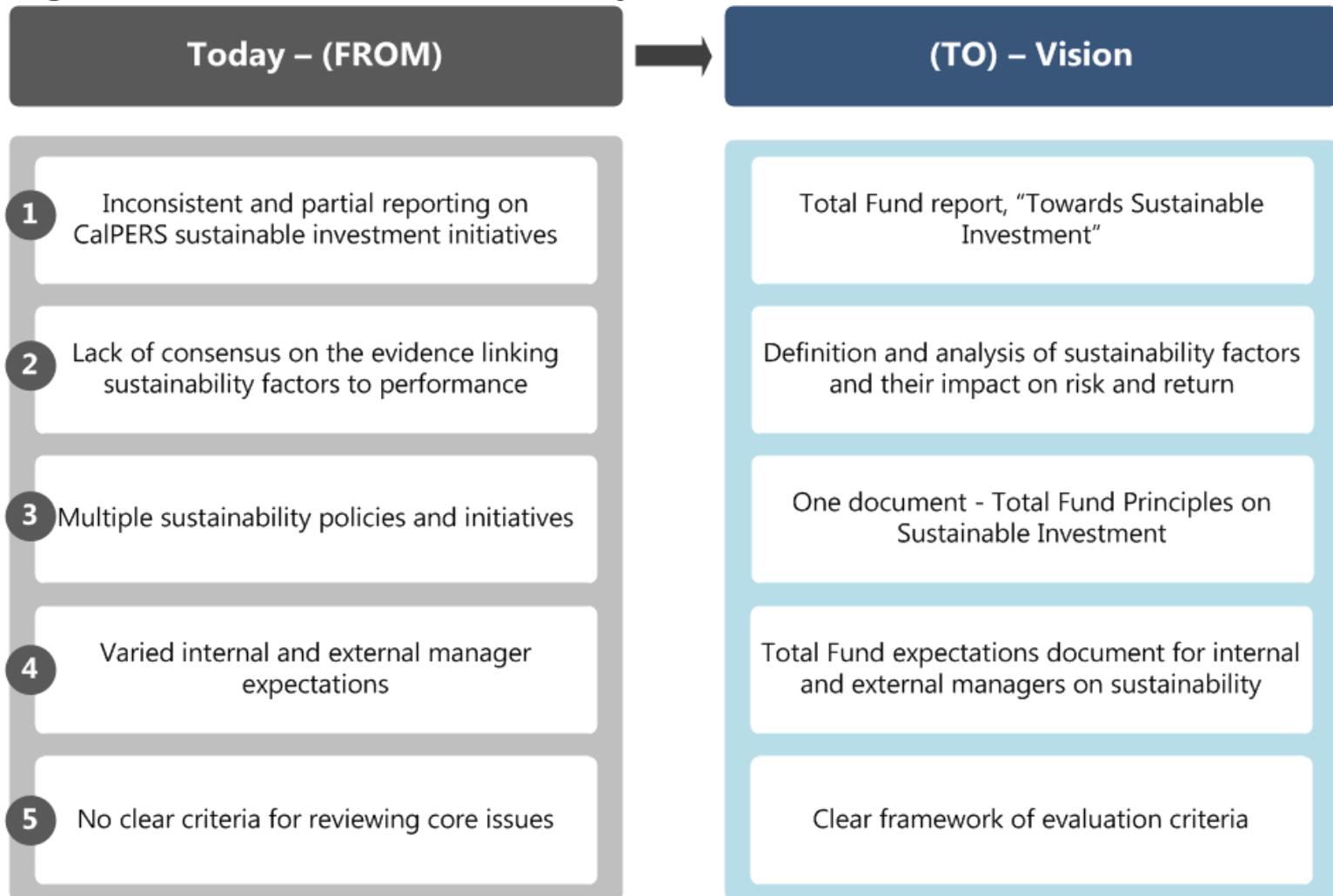


Financial Capital - Governance

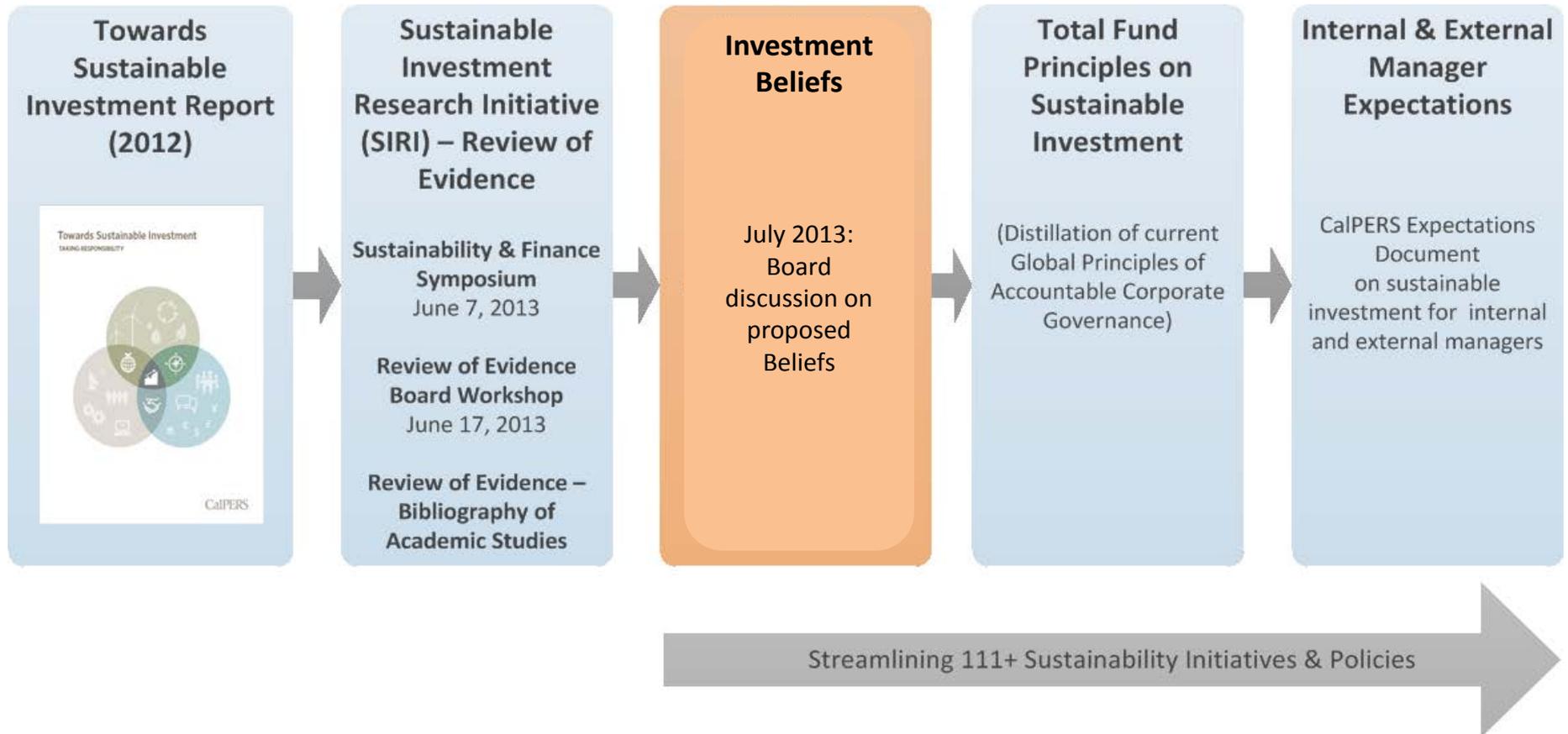
Includes equity, debt, public and private investments

Objective

Integration of sustainability factors across the total fund



Total Fund Sustainable Investment: Initiatives



Sustainable Investment Research Initiative (SIRI)

- CalPERS launched SIRI to drive innovative thought leadership to inform and advance our understanding of sustainability factors and the impact they may have on companies, markets, and investment intermediaries from the perspective of a large, global, long-term, and multi-class institutional asset owner
- Board and staff discussions in relation to the Investment Beliefs development process have highlighted the need for a review of evidence to provide clarity on the definition of sustainability and its potential impact on investment risk and return across the portfolio
- Lacked an independent appraisal of the existing body of academic research and an identification of potential gaps for further inquiry

Partnered with UC Davis Graduate School of Management

- Independent, credible, comprehensive review of the existing literature on sustainability factors and financial performance
 - *Review of Evidence: Bibliography of Academic Studies* – an online source of over 700 academic studies on sustainability factors relevant to long-term value creation
- Inaugural *Sustainability & Finance Symposium*, on June 7, 2013 – a rigorous technical discussion and debate with leading academics and practitioners, including CalPERS Board members and senior investment staff
- This research will inform CalPERS development of Investment Beliefs and Total Fund Sustainability Strategy

Sustainability & Finance Symposium: Paper Selection Process

- Symposium Program Committee, co-chaired by UC Davis and Columbia Law School, comprising of leading scholars
- Call for papers seeking empirical and theoretical research from academics and investment practitioners in the fields of finance, economics, accounting, law and business that would contribute to a rigorous debate and discussion on sustainable long-term value creation and capital market stability
- The Committee received over 90 submissions – selected seven papers to be presented and debated at the Symposium on June 7, 2013

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**CalPERS Sustainable
Investment Research
Initiative – Review of
Evidence**

*Academic Perspectives on
Sustainability Factors*

Prepared for:
CalPERS Board of Directors

June 17, 2013

Today we'll explain the current state of CalPERS' efforts to engage with the latest research on sustainability issues and our suggested next steps for moving that engagement forward.

- • The Investment Beliefs of Economists
 - Current State of Play: Research on the Firm and Stakeholders
 - Current State of Play: Research on the Firm and Shareholders
 - Summary of Recommendations and Next Steps for Academic Engagement

Economists generally agree regarding some core investment principles, which provide an important framework for thinking about many issues in asset management. In today's workshop, we will draw on several of these core principles.

- **Valuation:**
The value of an investment is the present value of the future cash flow generated by the investment.
- **Risk and Return:**
There is a positive relation between risk and return; thus, higher returns are expected to be associated with higher levels of risk.
- **Externalities:**
Firm activities may impose costs on society (e.g., when a factory pollutes). Reducing these costs will benefit society, but it is less clear whether doing so is in the interests of the company's owners.
- **Competition:**
Financial markets are competitive. As a result profit opportunities are rare and fleeting. Thus, observing a historical pattern in returns does not necessarily predict a pattern going forward.
- **Agency Issues:**
Conflicts of interest between a principal and agent (e.g., managers and shareholders) affect the behavior of market participants. Resolving these conflicts of interest would produce value for the principal.

This example, which we'll refer to throughout today's discussion, shows how important these basic finance principles are to determining the value of assets.

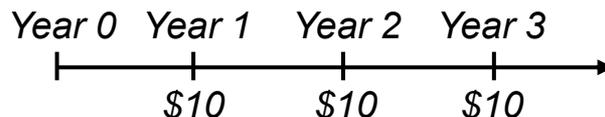
Basic Principles

Motivating Example

Key Implications

Valuation: The value of the firm is equal to the discounted present value of its future cash flows.

Suppose a firm is expected to generate \$10 in cash every year forever, and the appropriate discount rate is 10%:



Economists agree that the firm's value equals the annual cash flow divided by the discount rate (say 10%):

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

The discount rate reflects the riskiness of the firm's cash flows.

Firm value is increased only when:

- **Cash flows produced by the firm increase**, or
- **The rate used to discount those cash flows decreases.**

We will use this example to illustrate how CalPERS should think about sustainability factors in its investment strategy. For example . . .

- In what ways—if at all—might **externalities affect firm value**?
- What are the best ways for investors to **reduce agency costs** and thereby increase firm value?

Today we'll explain the current state of CalPERS' efforts to engage with the latest research on sustainability issues and our suggested next steps for moving that engagement forward.

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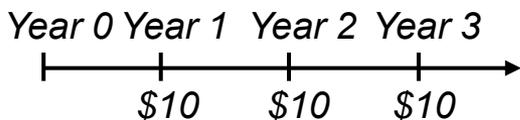
Some argue sustainability factors increase the risk of investment. If so, asset owners would benefit from a reduction in this risk.

- **Plausible “sustainability” risks include, for example:**
 - Climate Change
 - Labor Practices
- **Reducing “sustainability” risk *could* lead to higher valuations** and redound to the benefit of current owners of the asset.
- While firm value may be enhanced through risk reductions, **there are some caveats.**
 - Reducing “sustainability” risk may **require large capital investment** (i.e., reduce investment cash flows).
 - Unless there is an incentive problem (i.e., managers lack incentives to reduced priced risk), **there is no need for shareholders to engage firms** to affect these changes.

Our example illustrates how reductions in risk increase shareholder value.

Firm Value Base Case

Recall our example company: (\$10 annual cash flow, 10% discount rate)



The value of this firm is equal to:

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

Firm Value With Risky Cash Flows

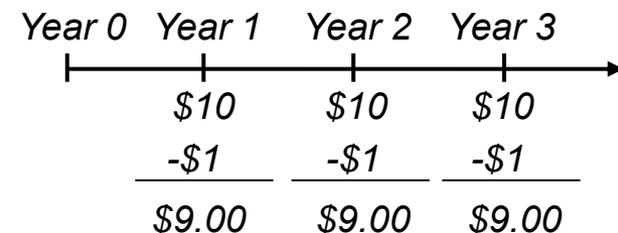
Cash flows in our simple example are **expected cash flows** that represent averages across many possible outcomes.

High Risk Firm				
	Year 0	Year 1	Year 2	Year 3
		----- ----- ----- ----->		
Bull: 50%		\$15	\$15	\$15
Bear: 50%		\$5	\$5	\$5
		-----	-----	-----
		\$10	\$10	\$10

Low Risk Firm				
	Year 0	Year 1	Year 2	Year 3
		----- ----- ----- ----->		
Bull: 50%		\$12	\$12	\$12
Bear: 50%		\$8	\$8	\$8
		-----	-----	-----
		\$10	\$10	\$10

Firm Value with Reduced Risk

Suppose that shareholders can spend \$1 per year to reduce risk and this reduces the discount rate on cash flows to 8%.



Firm value is increased because of the risk reduction:

$$\text{Value} = \frac{\$9.0}{8\%} = \$112.50$$

Discount rate declines due to risk reduction.

For these reasons, reductions in priced risk (or risk that investors care about) will improve shareholder value. If sustainability factors affect priced risk, firm value will be affected.

Though the theory regarding the relation between risk and valuation is sound, academic research establishing a convincing causal relationship between sustainability factors and risk is sparse.

- There are a handful of studies correlating risk to sustainability factors. For example, Corporate Social Responsibility (CSR) ratings have been **correlated with both lower market risk** (Albuquerque, Durnev, and Koskinen, (2013)) and **higher credit ratings** (Attig, Ghouli, Guedhami, and Suh (2013)). There is a similar correlation between **environmental ratings and market risk** (Sharfman and Fernando (2008)).
- Academics remain skeptical about these studies for several reasons:
 - The direction of causation is unclear; a deep understanding of **causality is crucial**.
 - Does investment in CSR lower risk? — **or**— Do firms with low risk invest in CSR?
 - If CSR lowers risk, CSR investment will lead to lower risk and higher valuations.
However: If low-risk firms already invest in CSR, CSR investment will not affect risk or valuations.
 - There is **little economic theory** drawing a direct link between “sustainability” factors and risk (for an exception, see Albuquerque, Durnev, and Koskinen (2013)).
 - Many studies rely on KLD ratings to assess CSR in general or environmental performance in particular. At the Symposium, both academics and practitioners expressed **a fair amount of skepticism about these ratings** because they are unaudited and are combined in inconsistent ways across studies.

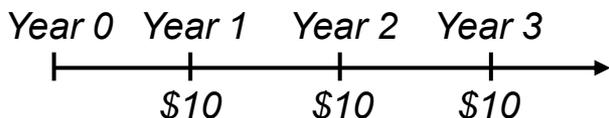
Economists agree that firms engage in activities that create negative externalities.

- **Pollution is the classic example** of an externality.
 - A manufacturer of a good might generate pollution that in turn damages the health and environment of those near the manufacturing facility.
 - The manufacturer does not bear the full cost of the pollution it generates.
- The **classic solution to the externality problem is public policy** that forces the manufacturer to bear the cost of pollution. For example, regulation might impose:
 - Emission caps
 - Emission taxes
- Through engagement, **shareholders may be able to mitigate the externalities of the firm, but this is likely to come at the expense of shareholders.**

Our example also shows why economists are skeptical of shareholder efforts to address externalities.

Firm Value Without Externalities

Recall our example company, with \$10 in annual cash flow and a 10% discount rate:

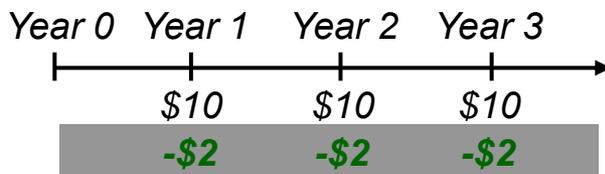


We saw earlier that the value of this firm is equal to:

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

Firm Value With Externalities

Now suppose that the firm's actions create a negative externality to society of \$2 per year. This has no effect on the firm's cash flows:



Firm value is unchanged, but there is a negative externality:

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

$$\text{Externality} = \frac{-\$2}{10\%} = -\$20$$

$$\text{Social Wealth} = \$100 - \$20 = \$80$$

Firm Value With Reduced Externalities

Suppose that shareholders can spend \$0.50 per year to reduce the externality by \$1. Now the firm's cash flows look like this:



Although the externality is reduced, so is firm value:

$$\text{Value} = \frac{\$9.5}{10\%} = \$95$$

$$\text{Externality} = \frac{-\$1}{10\%} = -\$10$$

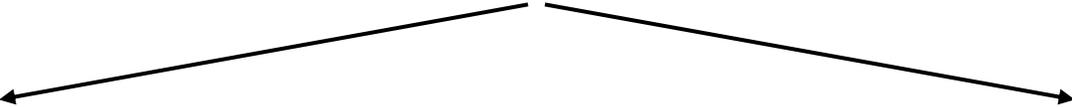
$$\text{Social Wealth} = \$95 - \$10 = \$85$$



Note that shareholders' efforts to address the externality make society better off—but leave shareholders worse off.

Much of the research on sustainability factors sits outside of an equilibrium framework and argues either investors have non-financial motives for investing or do not correctly value important information about the firm.

- We often hear the slogan “Doing well by doing good.” Economists do not view this as a meaningful model of the world.
- However, economists have posed two possible channels through which sustainability factors might affect returns:



Overlooked Information

Investors may not pay attention to relevant, but difficult-to-measure information like sustainability factors

Investor Preferences

For example, investors may divest of companies that produce nefarious products

- Very different mechanisms and competing predictions
 - **Overlooked information** is about financial markets’ inability to process information.
 - **Investor preferences** is not about risk, but is a non-pecuniary preference of investors.

Our example also demonstrates how investor preferences or overlooked information might cause prices to depart from their underlying value.

Basic Principles

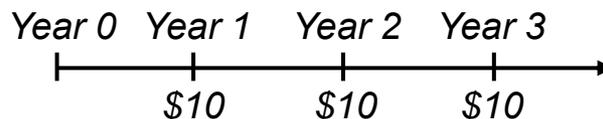
Valuation: The value of the firm is equal to the discounted present value of its future cash flows.

And:

Competition: Although value and price may occasionally differ, over time **competitive financial markets** will eventually close gaps between value and price.

Motivating Example

Returning to our firm with cash flows of \$10 each year:



Although economists agree that the firm's value is \$100,

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

Prices might depart from this \$100 value, either because of:

- **Overlooked information** (e.g., if investors misunderstand that labor relations generate value); or
- **Investor preferences** (e.g., divestment from tobacco).

Key Implications

If markets systematically undervalue some stocks, investors who hold those undervalued investments will earn superior returns (e.g., employee-friendly stocks or tobacco).

However:

Over time, a **competitive financial market** will **close any gaps** between price and value, so these effects should not persist in equilibrium.

Consistent with the overlooked information hypothesis, several studies establish a positive empirical relation between returns and sustainability factors (e.g., environmental, worker satisfaction, or governance rankings).

- These studies hypothesize that **markets do not correctly value sustainability factors**, which are relevant for valuation, *and* firms benefit from good sustainability records:
 - Environmental factors (Derwall, Guenster, Bauer, Koedijk (2005))
 - Employee satisfaction (Edmans (2011))
 - Shareholder rights (Gompers, Ishii, and Metrick (2003))

- In equilibrium, **these relations should disappear** as market participants place more emphasis on these value-relevant factors. There is some evidence that this is the case:
 - Shareholder rights (Bebchuk, Cohen, and Wang (2013))
 - Stakeholder relations (Borgers, Derwall, Koedijk, and Horst (2013))



Investing on the basis of past relations between sustainability factors and returns requires a belief that competition will fail to eliminate these relations in the long run.

Investors may have non-financial motives for investing in some firms, which will lead to higher valuations and lower returns for favored companies and lower valuations and higher returns for out-of-favor companies.

- Investors may **favor firms that are socially responsible and avoid firms that are not.**
 - For example, many investors have chosen to divest from the stocks of companies engaged in tobacco manufacturing.
- As a result, stocks that investors do not favor will:
 - Have **less access to capital**;
 - Suffer from **lower valuations** but...
 - Earn **higher returns**
- Consistent with the investor preferences hypothesis, Hong and Kacperczyk (2009) document that sin stocks (e.g., gaming, tobacco, and alcohol) have:
 - Lower valuations, and
 - Higher returns



Focused divestment strategies may leave firms with less capital access and lower valuations—but, as a result of these low valuations, they will earn higher returns.

Many investors believe that it is unethical or amoral to invest in companies that engage in objectionable practices.

- Example: Norway
 - The Fund’s Advisory Council on Ethics provides ethical guidelines for investment of the Fund’s assets. For example, the Advisory Council has said that the Fund **should not “through its investments contribute to unethical acts**, such as violations of fundamental humanitarian principles . . . or severe environmental degradation.”
 - These guidelines have resulted in several divestments (e.g., Walmart).
- Economists do not object to incorporating ethics into investment as doing so arguably increases the total utility of an investor who values ethical considerations.
- However, economists also agree that these ethical screens come at a financial cost in two ways:
 - First, **out-of-favor stocks are likely to earn strong returns if they are undervalued** as a result of ethical screens.
 - Second, **constraining the available opportunity set to investors will necessarily lead to an inferior set of investment options.**

 ***In our view, an institution could incorporate ethics into its investment policies if there exists a consensus among its beneficiaries regarding important ethical considerations. However, doing so may lead to tensions between ethical considerations and the institution’s fiduciary responsibility.***

Based on the core economic principles we discuss and the available empirical evidence, we conclude that a large institution should tread carefully on adopting sweeping beliefs related to sustainability factors.

- Economists agree that externalities created by firms are important.
- However, absent other factors, shareholder engagement to reduce externalities will result in lower shareholder returns.
- The impact of sustainability factors on risk and return is ambiguous:
 - Some argue **sustainability factors may generate priced risk**, but the available empirical evidence on these issues is new and does not clearly establish causality.
 - Some argue **sustainability factors are positively correlated with returns** because markets systematically **overlook information**. However, we do not expect these relations to persist in equilibrium.
 - Some argue **sustainability factors are negatively correlated with returns**, because **investor preferences** affect pricing.

 ***The impact of sustainability factors on risk and return is ambiguous. However, as we will now discuss in more detail, there is a more unified message when we turn to governance issues.***

Today we'll explain the current state of CalPERS' efforts to engage with the latest research on sustainability issues and our suggested next steps for moving that engagement forward.

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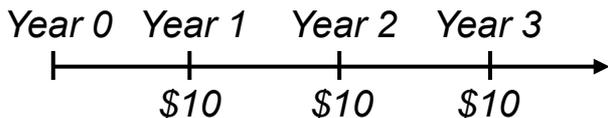
The agency-cost framework helps us understand how divergence in the interests of managers and shareholders can be costly for a company's owners.

- Managers are the ***economic agents*** of the company's shareholders—that is, managers are charged with managing shareholders' money.
- Therefore, where **managers' interests diverge from those of shareholders**, managers may pursue their own interests, reducing firm value (Jensen & Meckling (1976)).
- Thus, ***theoretically***, shareholders should invest in mechanisms that would constrain managers' pursuit of their own interests so long as the benefits of those mechanisms outweigh the costs.
- ***Empirical evidence*** generally suggests that investment in these mechanisms—including corporate governance protections in the form of shareholder rights—increases firm value.

Our motivating example also shows why it often makes sense for shareholders to invest in corporate governance changes.

Firm Value *Without* Agency Costs

Recall our example company, which generates \$10 in cash every year forever and has a discount rate of 10%:

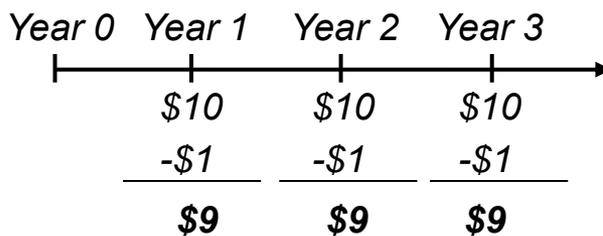


We saw earlier that the value of this firm is equal to:

$$\text{Value} = \frac{\$10}{10\%} = \$100$$

Firm Value *With* Agency Costs

Now suppose that the managers, pursuing their own interests rather than those of shareholders, abscond with \$1 in cash each year:

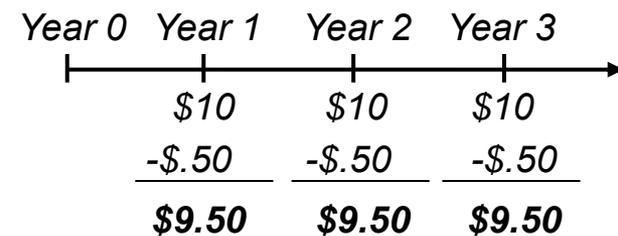


Now the firm's value has been reduced to:

$$\text{Value} = \frac{\$9}{10\%} = \$90$$

Firm Value *With Reduced* Agency Costs

Suppose that shareholders can spend \$0.50 per year to constrain managers from absconding with firm value. Now the firm's cash flows look like this:



So, by investing in governance protections, shareholders have increased firm value:

$$\text{Value} = \frac{\$9.50}{10\%} = \$95$$

➔ For these reasons, scholars frequently argue that shareholder-friendly corporate governance changes may increase firm value.

Managers may use shareholder resources for their own benefit—at the expense of firm value.

- Agency questions focus on managers acting in ways that **benefit themselves rather than shareholders**. For example, managers may:
 - Engage in unwise acquisitions or investments (“empire-building”);
 - Shirk their job responsibilities; and
 - Spend shareholder money on charitable or political causes in ways that are good for society—but bad for shareholders.
- Empirical evidence provides some support for the view that managers **invest in corporate “goodness” at the expense of shareholders**:
 - Spending on corporate “goodness,” such as charity, increases when profits rise (and managers have more to spend on pet projects) (Cheng, Hong, and Shue (2013)).
 - CEOs’ political affiliation affects spending on “goodness” (Di Giuli and Kostovetsky (2011)).
 - For intriguing contrary evidence that “goodness” interventions may increase shareholder value, see Dimson, Karakas, and Li (2013).
- Recent debates have also focused on **whether corporate spending on politics is in the interests of shareholders**:
 - On the one hand, managers may use such spending to influence policy in a way that is favorable to the firm and shareholders;
 - On the other, managers may spend shareholder funds in order to advance political causes that the manager favors personally.

The empirical evidence on shareholder rights offers several clear lessons for CalPERS to consider in the formulation of its investment beliefs and sub-beliefs.

Key Literature and Findings

Engagement by **activist hedge funds** is associated with positive abnormal stock returns (Brav, Jiang, Partnoy and Thomas (2008)).

Staggered board elections are associated with lower firm value, particularly in light of management's freedom to adopt potent anti-takeover devices like the poison pill (Bebchuk and Cohen (2005)).

Executive compensation may reflect managers' influence over directors rather than the deal that is in shareholders' best interests (Bebchuk and Fried (2006); Core, Guay, and Larcker (2003)); empirical evidence suggests that the **pay-performance link** is especially likely to be weakened by agency costs (Jensen and Murphy (1990); Jackson (2013)).

Investment Implications

CalPERS should **oppose currently proposed changes to legal rules** that would discourage these investors, and should **work with these investors** on engagements with public companies.

CalPERS should **support shareholder proposals to de-stagger public company boards**, and should **be skeptical when companies invoke the use of takeover defenses** when the firm is a target of an acquisition proposal.

CalPERS should urge Institutional Shareholder Services and their other clients to **focus on the pay-performance link** when casting votes on the "say-on-pay" proposals now required by law at all U.S. public companies.

 ***Although economists generally agree that shareholder rights improve value, evidence also suggests that one-size-fits-all solutions can reduce shareholder value (Stein (1988)).***

Although current research does not establish whether changes in firms' environmental and social factors will increase firm value, in general economists agree that investments in corporate governance are likely to be beneficial for shareholders.

- The agency-cost model offers **sound theoretical reasons** to believe that stronger shareholder rights will, in general, increase firm value.
- **Empirical evidence** suggests that interventions by activist shareholders increase firm value, that insulating managers from competition decreases firm value, and that executive compensation—and the incentives it provides managers—is likely influenced by agency costs.
- **Key debates** over the rules governing shareholder power are currently ongoing, and CalPERS is in a position to influence those debates.
- **Further research is needed** to persuade policymakers that these debates should yield outcomes that will be best for investors in the long term.



After summarizing our findings, we will focus on ways that CalPERS can support research initiatives that will influence these debates.

Today we' ll explain the current state of CalPERS' efforts to engage with the latest research on sustainability issues and our suggested next steps for moving that engagement forward.

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Our review of the literature on the relationship between sustainability factors and returns confirms some core principles of finance—but points to important paths for new research.

Key Principles

- **Externalities**, such as those associated with environmental and social factors, influence the allocation of capital.

Remaining Questions

- To what extent **do environmental and social factors influence risk and returns**? Are any such effects **likely to be sustainable** over the long run?
- **Do we have adequate data** to answer these questions with sufficient rigor?
- What **public policies** would lead to the optimal allocation of capital among firms?
- **What role should shareholders play—if any**—in the mitigation of externalities?

Our review of the literature on agency issues also confirms some core principles of finance—but points to important paths for new research.

Key Principles

- ***Agency issues that arise between shareholders and managers***, for example when managers act in their own interests rather than shareholder interests, affect firm value and the allocation of capital.
- In addition, ***agency issues that arise between an investor and delegated asset manager*** may also affect how returns are shared between the investor and asset manager—and how capital is allocated.

Remaining Questions

- **Which investors should engage directly with companies on agency-cost problems**, and which should leverage other investors' resources to reduce these costs?
- **What legal rules give large shareholders** the influence they need to address the effects of agency costs—**particularly in emerging markets**, where these rules are young and still developing?
- What types of contracting arrangements, especially in alternative asset classes like hedge funds and private equity, would **best protect investors** from these agency costs?
- Is there empirical evidence that would allow us to measure the magnitude of these agency costs?

To help address these questions, we recommend that CalPERS expand upon its existing engagement with the academic community.

Research Needs

- Gathering **further evidence on the relationship between environmental and social factors** and firm risk and returns.
- Addressing the **lack of reliable data** on environmental and social factors.
- Exploring the **investment policies and legal rules** that would reduce agency costs at CalPERS portfolio companies.

Recommended Engagement

- **Follow-on Symposium** to share new academic findings in these areas with practitioners at CalPERS and beyond.
- Call for Papers to **solicit future work designed to directly address CalPERS'** need for evidence on these questions.
- Consider supporting **development of new datasets on environmental and social factors**, and share existing CalPERS data to encourage academic collaboration.
- Consider supporting research **directed toward current policy and legal debates** on shareholder rights in public companies.

 ***Different asset classes may have different research needs. We would be delighted to help coordinate these and other engagements between CalPERS and the academic community in the future.***

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Discussion Touch Point

- Key Thoughts and Insights
- Questions and Answers

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